Environmental Impact Assessment Written Confirmation of the EIA Consent Decision

Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) (“the Regulations”)

Project Erebus
ORML2170

February 2023

Contents

1. Introduction

1.1 This document is the Environmental Impact Assessment ('EIA') Written Confirmation document for a regulated activity, requiring a Marine Licence, proposed by Blue Gem Wind Limited in Marine Licence application ORML2170 to provide a consented demonstration scale Floating Offshore Wind Development (FLOW). The site is located within the Celtic Sea and consists of a maximum of 7 Wind Turbine Generators (WTG) each housed on a semi-submersible floating platform with a total generating capacity for all WTGs of up to 100 Megawatts ("the Project").

2. The Project

2.1 Project Background

2.1.1 An application for a Marine Licence for the Project was submitted to Natural Resources Wales Permitting Service (NRW PS) by Blue Gem Wind Ltd. ('the Applicant') via their agent Marine Space on 17 December 2021. A number of documents were submitted to support the application, including the Project Erebus Environmental Statement (the ES) and the full list is presented in Annex 1. Where appropriate, these documents are referred to within the document.

2.1.2 The Project is a Test and Demonstration project, designed to demonstrate technical competence, delivery capability and technological innovation specifically for deployment of floating offshore wind within the Celtic Sea. The Project Array comprises up to 7 WTG with a total export capacity of up to 100 Megawatts (MW). The offshore development area covers an area of 43.5km^2 approximately 35km offshore to the west of Pembrokeshire (see Section 2.2). The Project includes an export cable with landfall at West Angle Bay and then onshore cabling to an onshore substation which will be connected to the local grid network at Pembroke power station. The Project lifespan is for 25 years which includes approximately 18 months for construction and a further 18 months for decommissioning.

2.1.3 The Marine Project elements include construction of the following:

- Up to 7 WTGs;
- Up to 10 semi-submersible floating platforms;
- Up to 10 array cables with associated cable protection;
- Subsea catenary mooring lines; including clump weights
- Offshore export cable (single cable laying 2 circuits "wrapped together" as a bundled solution), cable joints, associated protection
- Navigation and environmental monitoring equipment;
- Mooring and anchoring structures;

2.1.4 The Onshore Project elements encompasses the following:

- Landfall works including transition pits;
- Onshore substation;
- Onshore export cables (66kV from landfall to onshore substation and 132kV from onshore substation to grid connection

- Cable installation from landfall to Landfall Substation;
- Cable installation from Landfall Substation to Grid Connection
- Temporary road and right of way closures;
- Temporary main construction compound and up to four temporary construction compounds;
- Transition Joint Bays (TJB), joint bays/inspection chambers, access points and haul roads.

2.1.5 All activities listed in 2.1.3 will require a Marine Licence under Part 4, (Chapter 1) Section 66 of the Marine and Coastal Access Act.

2.1.6 The Applicant has presented a Project Design Envelope (PDE) ('Rochdale Envelope') for the Project[1]. This has been utilised for the assessment as, due to the nature of the project as a test and development site, some of the details cannot be confirmed at the time of the assessment. This approach looks to provide flexibility, acknowledges the rapidly evolving nature of technologies and allows for future innovations to be deployed across the site. The assessment of environmental effects has, therefore, been undertaken on the 'worst-case' parameters within the PDE and presented within the ES and other assessments.

2.2 Location

2.2.1 The offshore array area covers an area of 43.5km^2 in water depths of between 65-85m approximately 35km southwest off the Pembrokeshire coastline; outside of the 12 Nautical Mile (nm) limit within the Welsh Zone (Figure 1). The export cable corridor is up to 49km in length from the array area to landfall at West Angle Bay, Pembrokeshire. In addition, there will be onshore cabling and associated onshore infrastructure including a substation at the grid connection point located in proximity to Pembrokeshire power station (Figure 1).

[1] The maximum scenario of 10 x 9.5MW WTGs has been removed from the Project Design (refer ORML2170 Project Erebus Supplementary Environmental Information (ES Addendum) submitted 24 August 2022)

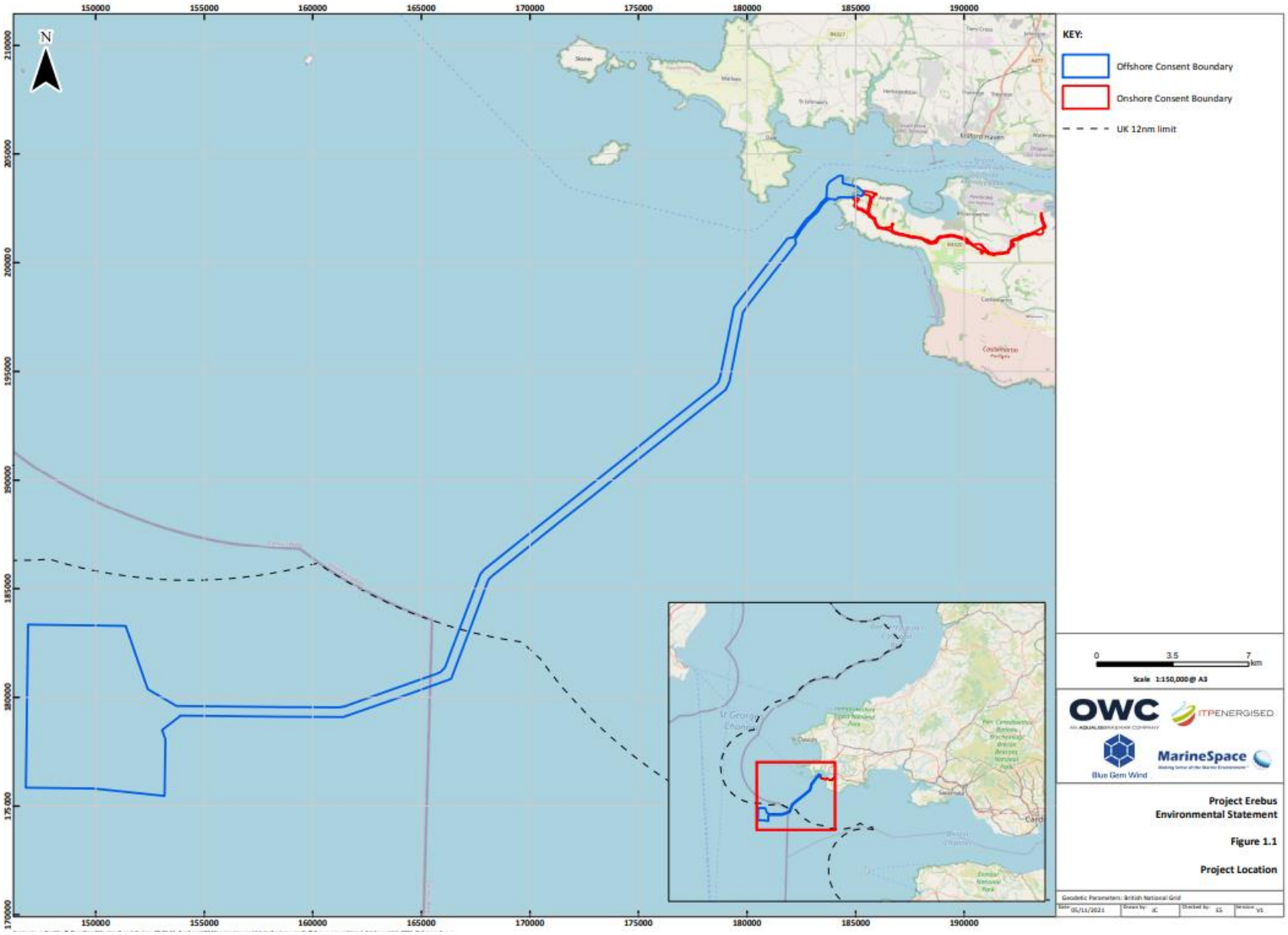

Figure 1: Location and boundary of Project Erebus and Export Cable Corridor (Marine Consent boundary (blue) and onshore consent boundary (red)). Reproduced from Figure 1.1 of Environmental Statement.

2.3 Statement of need

2.3.1 The objectives of the Project as identified within Section 1.4.3.5 of the ES are as follows:

- Demonstrate FLOW technology at Test and Demonstration scale within the Celtic Sea;
- Maximise low carbon job creation and socio-economic impact within the local supply chain;
- Demonstrate FLOW as a practical example of:
    - Covid-19 Green Recovery
    - Response to the declared Climate Emergency
    - UK and Welsh Governments 2050 Net Zero targets
    - UK FLOW 2030 target

2.4. Regulating regimes

2.4.1 The Project overlaps between two main consenting regimes.

2.4.2 A Marine Licence under the Marine and Coastal Access Act 2009, administered by NRW PS acting on behalf of the Licensing Authority, the Welsh Ministers. Aspects applied for via a Marine Licence are identified within section 2.1.3.

2.4.3 A Section 36 consent under the Electricity Act 1989; to construct and operate an offshore generating station, with deemed planning permission for the associated onshore transmission infrastructure. This is administered by Planning and Environment Decision Wales (PEDW) on behalf of the Welsh Ministers.

3. Environmental Impact Assessment

3.0.1 Council Directive 2011/92/EU (as amended) on the assessment of the effects of certain public and private projects on the environment ("the EIA Directive") aims to protect the environment and the quality of life by ensuring that projects which are likely to have significant environmental effects by virtue of their nature, size or location are subject to an EIA before permission is granted.

3.0.2 The Marine Works (Environmental Impact Assessment) Regulations 2007 (as amended) ("the Regulations") transpose the EIA Directive in Wales and England for marine licence applications.

3.0.3 Pursuant of Regulation 8 of the Regulations, Natural Resources Wales (NRW) considered the proposed works fell under Schedule A2, paragraph 21 of the Regulations on the assessment of the effects of the project on the environment, specifically:

> *Schedule A2, para 21. Installations for the harnessing of wind power for energy production (wind farms)*

3.0.4 Accordingly, the Marine Licence application required for the Project was accompanied by an Environmental Statement (ES).

3.0.5 NRW provided comments on a Scoping Report entitled ‘Simply Blue Energy 1 Floating Offshore Wind Farm: Environmental Impact Assessment Scoping Report’, submitted by Marine Space on behalf of Simply Blue Energy on 11 October 2019 (case reference: SC1905).

3.1 The Environmental Statement (ES)

3.1.1 The Environmental Statement outlined the proposed project organised under the following topic headings

3.1.2 Technical chapters:

- Introduction
- Overview of EIA methodology
- Site Selection and Alternatives
- Proposed Development description
- Policy and Legislation
- Marine & Coastal Processes
- Marine Seabed and Water Quality
- Offshore Designated Sites
- Marine & Coastal Ecology
- Fish & Shellfish Ecology
- Offshore Ornithology
- Marine Mammals
- Seascape & Visual Impacts
- Offshore Archaeology and Cultural Heritage
- Commercial Fisheries
- Shipping and Navigation
- Aviation and Radar
- Coastal and Marine Infrastructure and Other Users
- Onshore Geology, Hydrogeology and onshore Ornithology
- Landscape and Visual Impact
- Onshore Noise and Vibration
- Onshore Archaeology and Cultural Heritage
- Land Use
- Traffic and Transport
- Air Quality
- Socio-Economics, Tourism and Recreation
- Major Accidents and Disasters
- Inter-related Effects
- Cumulative Effects
- Summary of Residual Effects

3.1.3 The ES is considered to satisfy the requirements of Regulation 12 (2) and Schedule 3 of the Regulations. Specific comments pertinent to each ES chapter can be found in section 7.

3.2 Other Legislative and Policy Framework

Relative considerations under other legislation and / or policy are set out below:

3.2.1 Marine and Coastal Access Act (MCAA) 2009

Under the MCAA Section 69 (1), NRW PS will have regard to the following in deciding whether to grant a Marine Licence:

(a) the need to protect the environment,
(b) the need to protect human health,
(c) the need to prevent interference with legitimate uses of the sea, and such other matters as the authority thinks relevant.

3.2.2 Water Framework Directive (Council Directive 2000/60/EC)

3.2.2.1 The sea from the mean low water mark up to 1 nautical mile (NM) from shore is protected under the WFD (with the chemical status of coastal waters being assessed up to the 12NM limit) which requires a project or activity does not cause or contribute to deterioration in status of European Union (EU) water bodies or 'prevent the water body achieving 'good status'.

3.2.2.2 The potential effect of the Project was also screened against the Water Framework Directive objectives for the following Water Bodies:

- Pembrokeshire South (Coastal)- GB611008590003
- Milford Haven Outer (Coastal)- GB641008220000
- Milford Haven Inner (Transitional)- GB531006114100
- Pembrokeshire Carboniferous Limestone (Ground)- GB41002G206000

3.2.2.3 A Water Framework Directive Compliance Assessment concluded that the proposal, when considered alone and in-combination, will not pose a risk to deterioration of the above listed waterbodies.

3.2.2.4 Further details are described within the ORML2170 Project Erebus Water Framework Directive Compliance assessment.

3.2.3 Waste (England and Wales) Regulations 2011 (2011/988)

3.2.3.1 'Establishes a legal framework for treating waste in the EU. This is designed to protect the environment and human health by emphasising the importance of proper waste management, recovery and recycling techniques to reduce pressure on resources and improve their use.' Waste generated by a project or activity must be dealt with in an environmentally friendly way. To do this it applies the waste hierarchy from the Waste Regulations, which gives an order of preference for how waste is dealt with (prevention, re-use, recycling, recovery, disposal at sea).

3.2.3.2 See consideration under section 7.

3.2.4 The Conservation of Habitats and Species Regulations 2017 (as amended)

3.2.4.1 Designated' sites are those designated under The Conservation of Habitats and Species Regulations 2017 (as amended) ("Habitats Regulations") as Special Protection Areas ("SPAs"), Special Areas of Conservation ("SACs") or Sites of Community Importance ("SCIs"). As a matter of Government policy, Ramsar sites are afforded the same level of protection as designated sites under the Habitats Regulations.

3.2.4.2 The process for considering development proposals likely to affect these designated sites is known as Habitats Regulations Assessment (HRA), which takes account of the conservation objectives of the site(s) concerned. The HRA process is carried out by the competent authority; however, the supporting information to be used in the HRA should be provided by the Applicant.

3.2.4.3 The Applicant submitted the Information to Support a Habitats Regulations Assessment (ORML2170 Project Erebus Environmental Statement Volume 3 Appendix 8.2 HRA Screening Report and Appendix 8.3 HRA RIAA) report with the Marine Licence application and ES. However, this was not sufficient to fully consider the effects of the Project on the protected sites and their features. Additional supporting information was provided through further meetings and documents submitted by the applicant including EIA Addendum (submitted August 24, 2022). In addition to evaluation of ornithological data carried out by NRW Technical Advisors and JNCC technical Advisors.

3.2.4.4 The proposal is located within and overlaps with the following designated sites:

- Pembrokeshire Marine/Sir Benfro Forol SAC (UK0013116)
- West Wales Marine/Gorllewin Cymru Forol SAC (UK0030397)
- Skomer, Skokholm and the Seas off Pembrokeshire/Sgomer, Sgogwm a Moroedd Penfro SPA (UK9014051)

3.2.4.5 The effects of the proposal on designated sites, their qualifying features and conservation objectives have been considered by NRW PS during the licence determination. The Habitats Regulations allow co-ordination where more than one competent authority is involved (Regulation 67 (2)). This provision provides that a competent authority is not required to assess any implications of a plan or project which would be more appropriately assessed by another competent authority. The landward works of the proposal fall outside the marine licensable area and are assessed as part of the HRA assessment carried out under the deemed planning permission for the Section 36 consent. On that basis, it was considered that the implications of the onshore parts of the projects would be more appropriately assessed by the Welsh Ministers and, therefore, only the marine elements (those seaward of MHWS) would be given consideration within the HRA carried out by NRW PS.

3.2.4.6 Within the HRA carried out by NRW PS, a likely significant effect (LSE) from proposed activities seaward of MHWS could not be ruled out on the following sites with marine features:

- Bristol Channel Approaches
- Cardigan Bay/ Bae Ceredigion SAC
- Lleyn Peninsula and the Sarnau SAC
- North Anglesey Marine SAC
- Pembrokeshire Marine/ Sir Benfro Forol SAC
- West Wales Marine SAC
- Aberdaron Coast and Bardsey Island SPA
- Grassholm SPA
- Irish Sea Front SPA
- Skomer, Skokholm and the Seas off Pembrokeshire SPA

3.2.4.7 Following application of mitigation measures, including the commitment to produce and adhere to the following plans;

- Environmental Mitigation and Monitoring Plan (EMMP),
- Invasive Non-Native Species (INNS) Management Plan ,
- Code of Construction Practice (CoCP),
- Project Environmental Management Plan (PEMP),
- Marine Pollution Contingency Plans (MPCP) and
- Vessel Management Plan (VMP)

It was concluded that the proposed activities would not lead to an Adverse Effect on Site Integrity (AEOSI), either alone or in-combination, on any marine features of designated sites.

3.2.4.8 Further details are described within the Habitats Regulations Assessment carried out as part of the Marine Licence determination process.

3.2.5 Marine Conservation Zones

3.2.5.1 Section 116 of the Act provides powers to Welsh Ministers to designate Marine Conservation Zones (“MCZs”) with the aim of contributing to the achievement of a network of ecologically coherent and well-managed marine protected areas.

3.2.5.2 The applicant considered potential impact on the MCZ within Erebus ES volume 3 Appendix 8.1 Marine Conservation Zone Assessment. The Project does not overlap with the Skomer MCZ and NRW PS are satisfied that there is no significant risk of the Proposed Activities on the Skomer MCZ when undertaken in accordance with appropriate conditions, to mitigate any impacts on the mobile features including Grey Seal refer above (HRA).

3.2.6 Wildlife and Countryside Act 1981 (as amended)

3.2.6.1 Sites of special scientific interest ("SSSIs") are protected by law to conserve their wildlife or geology. The Wildlife and Countryside Act 1981 (as amended) ensures that SSSIs are protected and managed effectively.

3.2.6.2 Further detail and consideration of SSSIs are captured under Section 7 of this document.

3.2.7 Marine Policy Statement and Welsh National Marine Plan

3.2.7.1 The UK Marine Policy Statement ("MPS") is the framework for preparing Marine Plans and taking decisions affecting the marine environment. NRW must make licensing decisions in accordance with the MPS and the Welsh National Marine Plan unless relevant considerations indicate otherwise.

3.2.7.2 Within Section 5.4.4 of the ES, the Welsh National Marine Plan policies have been summarised and signposting provided to indicate where these were considered within the ES.

3.2.8 Environment (Wales) Act 2016

3.2.8.1 Article 4 of the Natural Resources Body for Wales (Establishment) Order 2012, as amended by the Environment (Wales) Act 2016 requires NRW to pursue the sustainable management of natural resources in relation to Wales, and apply the principles of sustainable management of natural resources in the exercise of its functions, so far as consistent with their proper exercise.

3.2.8.2 NRW considers that the procedures outlined in this Written Confirmation in the consideration of EIA consent are consistent with this requirement.

3.2.9 Well-being of Future Generations (Wales) Act 2015

3.2.9.1 This Act requires NRW, as a public body, to take reasonable steps in exercising its functions to work in accordance with the sustainable development principle, as set out in Section 5 of the Act.

3.2.9.2 NRW considers that that the EIA process is consistent with the sustainable development principle described in the Act, and that the processes outlined in this Written Statement are sufficient to properly demonstrate the sustainable development principle. In particular, NRW acknowledges that the principles of sustainable management include taking account of all relevant evidence and gathering evidence in respect of uncertainties, and taking account of the short, medium and long term consequences of actions. NRW further acknowledges that is it an objective of sustainable management to maintain and enhance the resilience of ecosystems and the benefits they provide and, in so doing meet the needs of present generations of people without compromising the ability of future generations to meet their needs, and contribute to the achievement of the well-being goals in section 4 of the Well-being of Future Generations (Wales) Act 2015.

3.3 Further information provided by the Applicant

3.3.1 NRW PS requested further information from the Applicant pursuant to a notification under regulation 14(1) on the 29 June 2022, this was subsequently received on the 24 August 2022. A list of documents submitted following the further information requested dated 29 June 2022 can be seen in Annex 2.

3.3.2 Pursuant to Regulations 16 and 17 of the Regulations, consultation with the public and technical consultees was carried out on the further information submissions, see Sections 4 and 6.

3.3.3 On the 17 November 2022, NRW PS made a request for further clarification from the applicant on specific technical information. This information was subsequently received on the 18 November 2022. A list of documents submitted on the 18 November 2022 can be seen in Annex 3.

4. Consultation with the public

4.1 Public Notices

4.1.1 Pursuant to Regulation 16, public notices were advertised to notify interested parties of the proposed works and give any interested parties or members of the public an opportunity to make representation on the application as necessary.

4.1.2 The application documents were made available as follows:

- A translated public notice was placed in the Western Telegraph 16 February 2022 & 23 February 2022; and
- The application documents were also made available to the public at: Blue Gem Wind Bridge Innovation Centre Pembrokeshire Science and Technology Park Pembroke Dock Wales SA72 6UN and Glan-yr-afon: Llyfrgell, Oriel a Gwybodaeth i Ymwelwyr / The Riverside: Library, Gallery and Visitor Information Off Swan Square Haverfordwest Pembrokeshire SA61 2AN for 42 days following the publication of the first public notice.
- Copies of the application documents were made available on NRW webpages.

4.1.3 No public representations were received.

4.1.4 Following submission of further information detailed in Section 3.3.1, public notices were advertised to notify interested parties of the provision of further information and give interested parties or members of the public the opportunity to make representation on the application and further information submissions as necessary.

4.1.5 The application documents and further information submission were made available as follows:

- A translated public notice was placed in the Western Telegraph on 7 September 2022 & 14 September 2022;

- A hard copy was made available at Oriel a Gwybodaeth i Ymwelwyr / The Riverside: Library, Gallery and Visitor Information Off Swan Square Haverfordwest Pembrokeshire SA61 2AN for a period of 42 days to coincide with the public notice period
- Copies of the application documents were made available on NRW webpages.

4.1.6 No public representations were received.

5. Consultation of EEA States

5.0.1 A Transboundary Screening Assessment did not identify potential for effects to any other EEA State.

5.0.2 Consequently, no material was provided to other EEA member States in relation to the application.

6. Technical consultation

6.1 The marine licence application was consulted upon on 10 February 2022 for a period of 42 days:

- Cadw
- Cefas
- Chamber of Shipping
- Civil Aviation Authority (CAA)
- Devon and Severn IFCA
- Joint Nature Conservation Committee (JNCC)
- Local Biodiversity Officers (LBO) for Pembrokeshire County Council
- Local Harbour Authorities (Tenby, Saundersfoot, Porthclais, Haverfordwest)
- Local Port Authorities (Fishguard Stenaline, ABPorts and Milford Haven Port Authority)
- Maritime and Coastguard Agency (MCA)
- Ministry of Defence (MoD)
- National Federation of Fishermen's Organisations (NFFO)
- Natural Resources Wales Technical Experts (NRW TE)
- NERL Safeguarding
- Ofcom
- Pembrokeshire County Council
- Pembrokeshire Coast National Park Authority
- Planning and Environment Decisions Wales (PEDW)
- Royal Society for the Protection of Birds (RSPB)
- Royal Yachting Association (RYA)
- The Crown Estate (TCE)
- The Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW)

- The Wildlife Trust (TWT)
- Trinity House (TH)
- UK Department for Business, Energy and Industry Strategy (BEIS)
- UK Department of Transport
- Welsh Archaeological Trust (WAT)
- Welsh Government Energy Branch
- Welsh Government Fisheries Branch and Marine Enforcement Officers (MEO)
- Welsh Government Marine Branch.
- Welsh Fisherman's Federation (WFFO)

6.2 The following organisations submitted comments:

- Cadw
- Chamber of Shipping
- JNCC
- Maritime and Coastguard Agency (MCA)
- Ministry of Defence (MoD)
- National Federation of Fishermen's Organisations (NFFO)
- NERL Safeguarding
- NRW Technical Experts (NRW TE)
- Pembrokeshire County Council
- Pembrokeshire Coast National Park Authority
- Royal Yachting Association (RYA)
- RSPB
- The Crown Estate (TCE)
- The Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW The National Trust
- The Wildlife Trust
- Trinity House (TH)
- UK Department for Business, Energy and Industry Strategy (BEIS)
- Welsh Archaeological Trust (WAT)
- Zoological Society London

6.3 Following submission of further information detailed in Section 3.3.1, the marine licence application and further information was consulted upon on the 31 August 2022 for a period of 42 days in accordance with Regulation 14. Consultation took place with the consultation bodies detailed in section 6.1. In addition, The National Trust the Zoological Society London were also included in the consultation.

6.4 The following organisations submitted comments:

- Cadw
- JNCC
- Maritime and Coastguard Agency (MCA)
- National Federation of Fishermen's Organisations (NFFO)
- NRW Technical Experts (NRW TE)
- Pembrokeshire Coast National Park Authority

- Royal Yacht Association (RYA)
- RSPB
- The Crown Estate (TCE)
- The Royal Commission on the Ancient and Historical Monuments of Wales (RCAHMW)
- The Welsh Wildlife Trust
- Trinity House (TH)
- UK Department for Business, Energy and Industry Strategy (BEIS)

6.5 Following submission of specific technical clarifications detailed in Section 3.3.3 the clarifications were consulted upon on the 22 November 2022 for a period of 21 days. Consultation took place specifically with NRW Technical Experts, JNCC, RSPB and The Welsh Wildlife Trust.

6.6 The following organisations submitted comments:

- NRW Technical Experts (NRW TE)
- JNCC
- RSPB

6.8 Details of the issues raised by the technical consultation bodies and how they have been addressed is set out in Section 7 of this document.

6.9 Consultees who did not provide a response were assumed to have no comment.

7. Issues arising during the consideration of the Environmental Statement, Marine Licence Application and representations received

7.0.1 Material issues that were highlighted by the ES and consultation process and the extent to which they have been addressed are detailed in this section.

7.1 Marine & Coastal Processes

7.1.1 NRW TE raised a number of issues in relation to this topic. The main issues included:

- Low confidence in the conclusions of the assessment due to insufficiency in baseline evidence and the lack of quantifiable evidence;
- The need for further assessments on the impact of cable protection on the form and function of Annex I subtidal sandbank systems of the Pembrokeshire Marine SAC;
- The need for further assessments on the impact of fine sediment plumes generated during cabling activity within West Angle Bay

7.1.2 Consequently, NRW TE were unable to agree with a number of the assessment conclusions until additional information was provided and the assessments revisited.

7.1.3 To address the issues raised, the Applicant submitted further information and justifications. Key information included the following:

- Provision of new numerical sediment plume modelling (presented within EIA Addendum, Aug 2022) and subsequent reassessment of impact pathways taking into account the spatial extent of the sediment plume.
- Further consideration and justification of physical processes assessment conclusions and baseline data used to inform assessment presented within EIA Addendum, Aug 2022).
- The agreement from the Applicant that cable protection will be non-continuous to allow sediment to overtop and flow around. Commitment that on the north and south sides of Turbot Bank the height of the cable protection will not exceed 1.5m to reduce the barrier to sediment flow.
- Additional post-consent monitoring proposed to confirm the predictions and conclusions of the assessment.
- Provision of the clarification report in relation to movement of sand waves on Turbot Bank (Further Technical clarification report, November 2022)

7.1.4 Following further information, justifications and clarifications from the Applicant, it was concluded by NRW TE that a considered appraisal of the impacts could be reached with the clarification of the sand wave movement on Turbot Bank. This included commitment to cable protection mitigation specifically that any cable protection would be non-continuous to allow sediment to overtop and flow around and that on the north and south sides of Turbot Bank the height of the cable protection will not exceed 1.5m to reduce the barrier to sediment flow.

7.1.5 NRW PS note that the Applicant has committed to carry out monitoring, in agreement with NRW TE, to assist with validation of the predictions within the ES. Further detail on this commitment is provided in Section 8 of this document.

7.1.6 NRW PS are satisfied that the concerns raised by NRW TE, have been sufficiently addressed by the Applicant within the ES and supplementary documentation. NRW PS consider that mitigation for non-continuous cable protection and that cable protection will not exceed 1.5m in height on the north and south of Turbot Bank means impacts to the features of the SAC can be avoided and can be secured through appropriate conditions within any Marine Licence issued, along with the provision for monitoring changes to coastal processes.

7.2 Marine Seabed and Water Quality

7.2.1 NRW TE agreed with the conclusion that there were no issues with contaminated sediments or water quality within the Project area. However a number of minor issues were raised in relation to this topic these included:

- Settlement of fine suspended sediments generated during cable installation within and around West Angle Bay should be assessed for sensitive habitats such as Maerl and included within the WFD assessment
- Consideration of possible temperature effects from the cabling
- Advised that the PEMP should also be considered as additional mitigation against accidental pollution events in addition to the MPCP.
- A number of minor inaccuracies were identified within the applicants WFD assessment.
- Considered further assessment required of the impacts to bathing water quality from the sediment plumes resultant from cabling activity within West Angle Bay
- Cefas Action levels should be used over Canadian Sediment Quality Guidelines (CSQGs)

7.2.2 To address the issues raised, the Applicant submitted further justification within the EIA Addendum (August 2022) and NRW TE confirmed that their outstanding concerns regarding this topic had been addressed. NRW PS are satisfied that the concerns raised by NRW TE and others have been sufficiently addressed by the Applicant. This includes acknowledgement to the measures prescribed within the outline Marine Pollution Contingency Plan (MPCP) (submitted Dec 2021) which forms part of the outline Construction (Project) Environmental Management Plan (PEMP) (as submitted Dec 2021).

7.2.3 NRW PS are satisfied that the concerns raised in relation to Marine Water and Sediment Quality have been adequately addressed and that sufficient assessment has been carried out. NRW PS consider mitigation will be required, namely adherence to the PEMP and MPCP and these can be secured through appropriate conditions within the Marine Licence.

7.3 Offshore Designated Sites

7.3.1 Consideration related to offshore designated sites overlap with those topic areas discussed throughout this section therefore have not been repeated. As detailed within section 3.2.4 a Habitat Regulations Assessment has been completed for the proposal.

7.4 Marine & Coastal Ecology

7.4.1 NRW TE raised a number of issues in relation to this topic. Issues were also raised by JNCC and The Welsh Wildlife Trust (TWT) (the latter in response to impact to benthic habitat from cable protection within the SAC). The main issues raised included:

- The need for the assessment of the potential impacts of sediment plumes generated during cabling activities within West Angle Bay and the subsequent impacts to sensitive habitats and species
- Discrepancies between the figures for habitat loss, including Annex I reef habitat

- Discrepancy between the Report to Inform Appropriate Assessment (RIAA) and ES in terms of cable protection quantities
- NRW TE could not rule out AEOSI for the sand bank feature of Pembrokeshire Marine SAC based on the assessment presented.
- More information on the trenching activities was required within the intertidal zone in order to determine whether some impacts should be considered as temporary or permanent
- Disagreement with the justification for the conclusions of magnitude of impact for all impact pathway assessments within the Marine & coastal Ecology Assessment.
- Consideration of impact of works on the Sea caves feature of the Limestone Coast of South West SAC which NRW TE advised is a functionally linked habitat with Pembrokeshire Marine SAC and effects should be assessed accordingly.
- Clarification on native oyster (as a Section 7 and OSPAR threatened/declining species) recorded during the baseline survey
- A more detailed assessment required for Invasive Non-Native Species (INNS)

7.4.2 To address the issues raised, the Applicant submitted further information and justifications. Key to addressing these issues were:

- Further assessments on the impact of fine sediment plumes generated during cabling activity within West Angle Bay including spatial extent and subsequent deposition (presented within EIA Addendum, Aug 2022)
- Assessment of these plumes on the Maerl Beds and other sensitive habitats (EIA Addendum, Aug 2022)
- Provision of more detailed assessment in relation to INNS and commitment to an INNS management plan (EIA Addendum, Aug 2022)
- Confirmation of habitat loss and extent of loss calculations (EIA Addendum, Aug 2022)
- Inclusion of sea-caves within the assessment as a functionally linked habitat to Pembrokeshire Marine SAC (EIA Addendum, Aug 2022)
- Provision of clarification on the magnitude of impact assessments for Marine Ecology (EIA Addendum, Aug 2022)
- Further assessment and then clarification (November 2022) on the sand wave movements of Turbot Bank
- Commitment to suitable mitigation for cable protection on Turbot Bank and subsequent monitoring to confirm conclusions of ES assessment

7.4.3 NRW PS are content that the potential impacts, along with the concerns raised by NRW TE, JNCC and TWT have been sufficiently addressed by the Applicant. NRW PS consider that the impact on benthic and intertidal receptors has been sufficiently assessed. As part of the mitigation the Applicant will be required to produce and implement an Invasive Non-native Species Management Plan pre-construction. NRW TE are satisfied that this will suitably address the uncertainty around INNS and that AEOSI can therefore be ruled out. NRW PS consider that these measures can be secured through appropriate conditions to the Marine Licence.

7.5 Fish & Shellfish Ecology

7.5.1 NRW TE raised a number of issues in relation to this topic; specifically:

- The need for the assessment of the potential impacts to all Section 7 marine fish identified as present in the area (e.g. spawning or nursery grounds known to overlap the Project).
- The need to consider diadromous species especially for the cable route and construction works occurring within the coastal zone.
- The need to consider ghost-gear as a potential risk for fish species especially larger species such as elasmobranchs.
- Contradictions within and across assessments e.g. in relation to suitable habitats, and overlap with the construction phase of Project Valorous.

7.5.2 To address the issues raised, the Applicant submitted further information and justifications. Key to addressing these issues were:

- Acknowledgement of the potential effects from ghost-fishing during the operational phase (EIA Addendum, Aug 2022) concluding that any impact will not be significant to fish populations.
- Confirmation that the Project Erebus construction phase will not overlap with Project Valorous construction phase.
- Clarification on the inclusion of diadromous fish within the assessment
- Further clarification on the distribution of habitats and the assessment of Section 7 marine fish species which was accepted by NRW TE.

7.5.3 NRW PS note the confirmation by NRW TE that gaps previously identified in fish and shellfish ecology assessment have been addressed and or justified and that there will be no adverse effect on site integrity in relation to migratory fish species, from the proposal. This aligns with the conclusions of the HRA carried out by NRW PS. It is also noted that no significant effects on migratory fish were predicted in the ES.

7.5.4 NRW PS consider the concerns and points of clarification to be adequately addressed. NRW PS agree with the conclusion of a 'negligible-minor adverse' impact on fish and shellfish from the Project.

7.6 Offshore Ornithology

7.6.1 The potential significant effects of the Project to offshore ornithology was assessed within Chapter 11 of the ES supported by Technical Appendices 11.1 to 11.9. Ornithological activity at the Project site was established through site-specific survey work and key species scoped into the assessment were:

- Northern fulmar *Fulmarus glacialis*;
- Manx shearwater *Puffinus puffinus*;

- Balearic shearwater *Puffinus mauretanicus*;
- European storm-petrel *Hydrobates pelagicus*;
- Northern gannet *Morus bassanus*;
- Herring gull *Larus argentatus*;
- Great black-backed gull *Larus marinus*;
- Lesser black-backed gull *Larus fuscus*;
- Black-legged kittiwake *Rissa tridactyla*;
- Atlantic puffin *Fratercula arctica*;
- Common guillemot *Uria aalge*; and
- Razorbill *Alca torda*.

7.6.2 Potential impact pathways were considered to arise mainly during the operational phase of the Project and were identified as: disturbance and displacement; collision risk, barrier effects to movement of the WTG structures; aggregating effect of the WTG structures, entanglement, secondary impacts such as to prey items and cumulative impacts. Impacts for all species were considered by the applicant as either minor adverse or negligible significance, which is not significant in EIA terms.

7.6.3 NRW TE and JNCC had significant concerns regarding methods and parameters used in the assessment of impacts to marine ornithology. RSPB, TWT and ZSL also raised significant concerns and could not agree with the assessment conclusions presented for multiple impact pathways and species without assessments being repeated using different methods/parameters and raised concerns with regards to omission of species and impact pathways from the assessment . The main issues included:

- Concerns around the approach and methodology of the Offshore ornithology assessment.
- The need for detailed engagement to discuss the approach taken and the need for reassessment.
- Reanalyses of baseline data to include partially identified birds that were previously excluded from analysis.
- Concerns that the worst-case scenario of 9.5MW WTGs had not been assessed for.
- Concerns that the apportioning of birds has not been undertaken correctly for the displacement analysis.
- Displacement analysis was required for both breeding and non-breeding periods.
- Concerns that Population Viability Analysis (PVA) had not been run correctly.
- Concerns raised with regard to the Collision Risk Modelling (CRM) and the estimates taken forward for assessment.
- Lack of assessment for Manx shearwater (in particular fledgeling birds) attraction to lighting.
- Insufficient consideration of wet storage areas for WTGs during construction phase and operational (when towed inshore for repairs) phase within ES
- Insufficient detail with regard to monitoring of impacts on seabirds and the need for greater detail and commitments around such measures including any requirements for adaptive management and technical adjustments.

- Due to low-confidence in the assessment approach, assessment conclusions could not be verified and therefore JNCC and NRW TE as the relevant SNCBs where unable to rule out AEOSI for SPAs and their features.

7.6.4 To address the issues raised, the Applicant submitted further information and justifications. Key to addressing these issues were:

- Engagement with NRW TE and JNCC by the Applicant during the application process.
- Explanation and justification regarding the assessment of ornithology (EIA Addendum, submitted 24 Aug 2022).
- Reassessment of CRM worst-case scenario based upon largest number of turbines and largest overall rotor-swept area. In addition to confirmation the 10 x 9.5MW turbine scenario has been removed from the Project design and the maximum number of turbines will be 7.
- Reassessment of displacement impacts to auk species (guillemot, razorbill and puffin); including PVA
- Reassessment of gannet collision risk modelling and displacement assessment.
- Explanation and justification related to the screening out of specific species e.g. Balearic shearwater
- Explanation and justification relating to wet-storage areas (EIA Addendum, Aug 2022 & ORML2170 technical consultation comments and responses.xls)
- As per advice, the Applicant completed a review of cumulative/in-combination assessments for other developments e.g. Awel y Mor, Morlais and Hexicon including identification of limitations to any quantitative assessment (and PVA) and updated the cumulative assessment accordingly.
- The submission of an outline Environmental Mitigation and Monitoring Plan (EMMP) (titled outline Operational Monitoring Plan (o-OMP) as submitted 24 August 2022) with the commitment for post-consent monitoring of seabirds at protected sites (e.g. bird tagging, collision sensors, long-term demographic studies) to validate the conclusions of the ES. Proposing that the final monitoring plan is finalised following discussion and agreement with NRW TE, JNCC, TWT and RSPB post consent.

7.6.5 NRW TE, JNCC and RSPB could not agree with the updated modelling presented by the Applicant; particularly concerning the PVA analysis for auk species. The Applicant presented further technical clarification in November 2022 (refer Annex 3) but this also did not address the previous comments from the SNCBs (refer ORML2170 technical consultation comments and responses.xls for full details on the issues identified). As all the data had been presented by the Applicant within their further submission (EIA Addendum, Aug 2022) NRW TE and JNCC were able to run their own analysis through the models in line with current guidance[2] and were able to confirm to NRW PS that the conclusions of the ES could be agreed with based on their own assessment rather than the methodology that was used within the ES and supplementary information to reach them. NRW PS were able to agree with the alternative modelling as undertaken separately by both NRW TE and JNCC

[2] Joint SNCB Interim Displacement Advice Note | JNCC Resource Hub

and were therefore able to agree with their advice that the conclusions of the ES could be agreed with.

7.6.6 The Wildlife Trust were satisfied with the further information and clarifications presented. However, RSPB maintained concerns with regard to site-specific survey timings (and subsequent influence on baseline data). They welcomed the fact that analysis was completed to determine if autocorrelation occurred within the survey data but would have preferred more explicit detail on the analysis. They also maintained concerns in relation to the 70% macro-avoidance correction (specifically for gannet collision estimates) whilst acknowledging the difference between themselves and NRW TE and JNCC's advice on this. RSPB also presented recently published (December 2022) information on Manx Shearwater attraction to artificial lights [3]. This was subsequently reviewed by NRW TE who advised that they did not consider this would alter the conclusions of the ES. Attraction to artificial light has also been considered within the HRA completed by NRW PS (see Section 3.2.4).

7.6.7 The Applicant has committed to the monitoring of key bird species to validate the conclusions of the ES with a focus on avoidance behaviour, flight height distribution around WTGs and effects on survival and productivity of breeding colonies using methods such as tagging, collisions sensors, radar, cameras and colony counts. The Applicant proposes that the ornithological specific monitoring will form part of the EMMP. To finalise the development of the detailed EMMP, the Applicant commits to engage with relevant stakeholder and experts including NRW TE, JNCC, RSPB and TWT. NRW PS consider that production and adherence to an EMMP can be secured through the provision of an appropriate condition within any Marine Licence.

7.6.8 After considering the information presented within the ES, further submitted information from the Applicant and the responses from consultees, NRW PS concludes that the risk to offshore ornithology is unlikely to be significant and are able to agree with the conclusion of the ES. NRW PS consider that monitoring commitments made by the Applicant to validate these conclusions can be secured through a detailed EMMP and appropriate conditions in any Marine Licence issued

7.7 Marine Mammals

7.7.1 Significant concerns were raised by NRW TE and JNCC in relation to the analysis, assessments of significance and the potential effects of underwater noise on marine mammals. The main issues included:

- The potential for the project to cause an adverse effect on site integrity for several SACs through noise disturbance on marine mammal qualifying features (i.e. bottlenose dolphin, harbour porpoise and grey seal) during construction phase.
- The lack of evidence around potential cumulative permanent threshold shift (PTS).

[3] Zoe Deakin, Aonghais Cook, Francis Daunt, Aly McCluskie, Nicola Morley, Emma Witcutt, Lucy Wright and Mark Bolton. (2022) A review to inform the assessment of the risk of collision and displacement in petrels and shearwaters from offshore wind developments in Scotland

- Uncertainty around assessment predictions for impact pathways from underwater noise .
- Concerns around the site-specific survey data and the baseline data analysis used to inform the assessment.
- The lack of assessment of potential impacts of disturbance from cable snapping.
- The need for a condition to prevent concurrent piling so the underwater noise modelling and subsequent assessment remains valid.
- The omission of Risso's dolphin from the assessment.
- Further justification required for the sensitivity and magnitude assessments for the impact pathways identified.
- Concerns surrounding the Cumulative Impact Assessment methodology for marine mammals.

7.7.2 To address the issues raised, the Applicant submitted further information and justifications. Key to addressing these issues were:

- Engagement with NRW TE and JNCC by the Applicant during the application process
- Assessment of cable snapping as a disturbance impact pathway was presented within EIA Addendum (Aug 2022) and concluded no risk of Permanent Threshold Shift (PTS) from cable snapping. Furthermore the Applicant has committed to monitoring operational underwater noise levels; secured through the EMMP. The timing, extent and duration of this monitoring will be agreed in consultation with JNCC and NRW TE post-consent.
- Further information and clarification on survey data analysis, density estimates for harbour porpoise and common dolphins and the baseline information used to inform the assessment was presented by the Applicant within the EIA Addendum, Aug 2022.
- Assessment of the impacts of the Project on Risso's dolphin; presented within EIA Addendum, Aug 2022. Conclusions for all impact pathways were either negligible or minor adverse and therefore not considered to be significant in terms of EIA.
- Further clarification and information was presented within the EIA Addendum, Aug 2022 on the sensitivity and magnitude assessments for marine mammals specific to; PTS from underwater noise (UXO detonation, piling), disturbance impacts from underwater noise generated from construction activities and barrier effects.
- Provision of further information and justification associated with the cumulative impact assessments.
- The Applicant's commitment to carry out additional underwater noise modelling post-consent to allow a more realistic assessment based on the likely operational devices
- The Applicant's commitment to develop, in consultation with NRW and JNCC, the final Marine Mammal Mitigation Protocol (MMMP) post-consent and pre-construction. The MMMP will take into account the best available information, methodologies, industry best practice, latest scientific understanding, best modelling practice, current guidance and the detailed project design. This is

to ensure that no injury of marine mammals occurs during the construction phase.

- The Applicant's further commitment that PTS (both instantaneous and cumulative) will be mitigated for in the final MMMP which will be agreed post consent. The MMMP will consider mitigation options including (but not limited to):
    - alternative anchoring options; Passive Acoustic Monitoring, Marine Mammal Observers (MMO) and Acoustic Deterrent Devices (ADD) to ensure the mitigation zone is free of marine mammals prior to pilling commencement;
    - at source noise abatement systems e.g. bubble curtains, casings or resonators; alternative hammer types e.g. vibro-pilling and BLUE piling technology;.

7.7.3 The Applicant has committed to awareness of current research and maintaining ongoing dialogue with NRW Advisory and JNCC as the Project develops to ensure that the final MMMP presents an assessment and mitigation measures reflecting the state of knowledge and best modelling practice available at the time. The Applicant has also presented potential monitoring and mitigation options within the outline EMMP. The Project Environmental Management Plan (PEMP) also includes a Vessel Management Plan (VMP) to manage collision risk and pollution controls. NRW PS consider that this commitment will be required and can be secured through the provision of appropriate conditions in any Marine Licence issued.

7.7.4 It is noted by NRW PS that the Applicant has committed to further discussions, details and agreements around monitoring methods and mitigation post-consent. Such requirements will lead to the development of a detailed MMMP, following approval by NRW PS. To aid the development of the detailed MMMP the Applicant is strongly encouraged to engage with relevant stakeholders including NRW TE and JNCC post-consent.

7.7.5 The mechanisms and commitments provided within the further information including commitment to produce and adhere to an appropriate EMMP, MMMP and PEMP (incorporating the VMP) are sufficient for NRW PS to conclude that no AEOSI would occur on marine mammals from collision or underwater noise related impacts.

7.7.6 Therefore, NRW PS are satisfied that the potential impacts on marine mammal receptors have been sufficiently addressed by the Applicant within the ES and supplementary documentation. NRW PS consider that mitigation provided through adherence to the MMMP, EMMP and PEMP (to include the Vessel Management Plan) can be secured through the provision of appropriate conditions within any Marine Licence issued.

7.8 Seascape & Visual Impacts

7.8.1 The seascape, landscape and visual impact assessment (SLVIA) is presented by the Applicant within Chapter 13 of the ES and supported by Technical Appendix 13.1 which details the full methodology and results of the SLVIA. The visual receptors included within the SLVIA were as follows:

- Settlements
- Long distance recreational routes such as the Wales Coastal Path and the National Cycle Network
- Recreational ferry routes
- Main roads
- Pembrokeshire beaches
- National Trust Sites within Pembrokeshire
- Wildlife Trust and RSPB Reserves
- Pembrokeshire Coast National Park (PCNP); including three of its eight dark skies discovery sites
- Heritage coasts
- National Landscape Character Areas (NLCA)
- Pembrokeshire Seascape Character and Receptors
- Pembrokeshire Landscape Character and Receptors

7.8.2 The SLVIA submitted with the ES concluded that the Project would not result in any significant seascape, landscape or visual effects due to the very limited visibility of the Proposed development being located at a distance of over 35km offshore.

7.8.3 NRW TE, Pembrokeshire County Council (PCC), Pembrokeshire Coast National Park Authority (PCNPA) and The National Trust raised a number of issues in relation to this topic. Concerns were mainly with regard to the potential impacts on seascape when viewed from the coastline, particularly in view from the Pembrokeshire Coastal National Park (PCNP). The main issues included:

- The level of effects on the PCNP resulting from offshore components of the project. Concerns were raised that the predicted effects of some of the seascape and visual effects on some receptors within the PCNP have been under-estimated.
- Concerns raised for the wider issues in respect of a number of prospective floating offshore wind projects in the Celtic Sea that would all involve the delivery west-east cable routes across the Angle Peninsula and thus an extended impact timeframe during construction if these cabling projects were all to be delivered independently.
- Further efforts should be made to avoid, minimise and mitigate effects, and consideration should be given to opportunities to enhance the designated landscape, in line with the requirements of the Wales National Marine Plan Policy SOC-06
- Impacts to night-time ‘dark’ skies and the need for further detail on lighting mitigation for the WTGs.

7.8.4 To address the issues raised, the Applicant submitted further information and justifications. Key to addressing these issues were:

- Clarification on the conclusions of the SLVIA and further information provided on the seascape and landscape effects (EIA Addendum, Aug 2022).

- Commitment from the Applicant to a funding package to support the enhancement of the designated landscape of the PCNP in accordance with Policy SOC_06 of the WNMP.
- Commitment to a Landscape Plan and a Landscape Ecological Management Plan (LEMP) to ensure the long-term success of the mitigation proposed within the ES and will be a condition of planning consent.
- Provision of further detail on the lighting mitigation for WTG (EIA Addendum, Aug 2022).

7.8.5 Following further clarification submissions and a further meeting with NRW TE; concerns remained by NRW TE that the SLVIA and ES had underestimated the significance of impacts from the development on seascape.

7.8.6 As is recognised by NRW TE within their representation, there is considerable common ground on the assessment approach and findings; however, there remains some differences in professional opinion around degree of impact and the threshold for considering these significant.

7.8.7 The Applicant and NRW TE agree that impacts during the construction and decommissioning phases will be both temporary and reversible and therefore not significant in EIA terms. NRW TE also support consideration of enhancement package.

7.8.8 NRW TE disagree with the Applicant surrounding the assessment of impacts of significant effect from the operational phase of the development. NRW TE consider that from certain viewpoints the development would affect special qualities of the PCNP, in particular the perceptions of undeveloped, natural seascape, and the qualities of remoteness and tranquillity and that these effect could be considered to be significant. The Applicant recognises that some adverse impacts identified are near the threshold for significance; however, in their professional judgement this is not the case due to a number of factors; specifically the Applicant considers that effects are relatively contained to the coastal edges of specific areas of the PCNP, which does not represent the PCNP as a whole, with residual effects only occurring in certain visibility conditions on limited occasions, with wide panoramic views retained due to the FLOW being more than 35km from the mainland coast, consisting of up to 10 devices only, and being contained in lateral spread. NRW PS have considered the representation made, and evidence submitted and consider that it is agreed that the potential impacts are near the threshold for significant impact, NRW PS have therefore taken a precautionary approach and consider that there is a potential for significant adverse effect on seascapes as a result of the operational phase of the Project.

7.8.9 We acknowledge that there is a difference of professional opinion or judgement as between the Applicant and NRW TE. In our assessment, the proposed development is likely to have significant effects on the natural beauty and special qualities of the PCNP. We do not agree with the Applicant that effects on the special qualities identified are not significant. In our assessment, although significant effects would occur to special qualities of the PCNP, the proposed development would not undermine the statutory purpose of the PCNP and would not compromise the purposes of its designation.

7.8.10 Other consultees e.g. National Trust, PCNPA and PCC were satisfied with the assessment approach, clarifications and commitment of the Applicant to funding enhancement packages. NRW PS also note the comments from all three of these consultees which state their support for the Project going ahead.

7.8.11 NRW PS have noted the Applicant's acknowledgement that effects to certain perceived qualities of the PCNP will occur from areas with visibility from the south-western facing coastlines of the PCNP and is therefore committing to a funding package to support the enhancement of the designated landscape of the PCNP in accordance with WNMP Policy SOC_06.

7.8.12 NRW PS also notes PCNPA's agreement that the impact of the development on the special qualities of the National Park are appropriately discussed with justified conclusions and a clear narrative explanation is provided within ES Volume 1, Chapter 13 SLVIA chapter as to why these adverse effects on individual receptors and special qualities of the PCNP are not considered to be significant.

7.8.13 The Applicant has committed to mitigation (alignment of turbines and paint colour) and an enhancement package. PCC have agreed draft conditions for the Planning Permission with the Applicant which secures the enhancement package (following agreement with PCNPA) therefore NRW PS are satisfied that this mitigation can be secured through the Planning Permission.

7.8.14 We have taken into account the WNMP's low carbon energy Supporting Policies for the development of renewable energy activities, in particular ELC_01, seek to ensure that potential for energy generation from renewable sources is achieved in line with climate and energy targets, and does so in a way which gives due regard to relevant environmental, social and cumulative impact considerations, in particular WNMP policies SOC_06, SOC_07 and SAF_01 b. Notwithstanding the proposed mitigation, which we consider to be reasonable and capable of being secured by marine licence conditions, in our assessment there would remain significant adverse effects to seascape and visual effects during operation stages of the proposed development.

7.8.15 In light of the above, NRW PS consider that the Applicant, in line with Policy SOC_07 and SOC_06 of the WNMP and chapter 2, section 2.6.5 of the Marine Policy Statement, has taken into account the potential impact on seascape, landscape and visual receptors within the ES and relevant supporting documentation. Notwithstanding our assessment that there would remain significant adverse effects to seascape and visual effects during operation stages of the proposed development, we are satisfied that the Applicant has sought to avoid and minimise impacts where possible and NRW PS note that the Applicant has committed to provide compensation through the enhancement package to be secured through the deemed Planning Permission to offset these impacts.

7.8.16 NRW PS note that the potential for impact on visual receptors remains after mitigation. However, within Section 1.4.3 of the ES (December 2021), the Applicant sets out the need for the Project including its benefit to the local economy and the renewable sector. This includes supporting UK commitment to deliver 50GW of

offshore wind capacity (some of which is in the form of floating offshore wind farm Projects) by 2030 to aide its commitment to net carbon emissions by 2050 through the Climate Change Act 2008 (as amended). The Welsh Government has also set a legal commitment to achieve net zero by 2050 with a push to 'get there sooner' . The purpose of Project Erebus is to demonstrate FLOW technology at Test and Demonstration scale within the Celtic Sea to support these commitments to Net Zero targets and the UK FLOW 2030 target.

7.8.16 NRW PS consider that although impacts remain there has been a clear and convincing case set forward for proceeding with the development by the Applicant.

7.9 Offshore Archaeology and Cultural Heritage

7.9.1 RCAHMW, Cadw and Welsh Archaeological Trust (WAT) were satisfied with the assessments and conclusions of this topic.

7.9.2 NRW PS note that RCAHMW, Cadw and WAT concur with the ES that there is a possibility that undesignated and unrecorded archaeological features may be located during the construction works. Therefore certain conditions are required to secure appropriate safeguards for the marine and maritime archaeological resource including:

- The requirement for an Archaeological Mitigation Strategy and a Protocol for Archaeological Discoveries to be submitted to and approved in writing by NRW PS before any marine works can commence.
- The requirement of a Written Scheme of Investigation (WSI) for a staged programme of archaeological work.
- Archaeological mitigation has also been proposed for the terrestrial works which would include avoidance of known historic assets, monitoring of geotechnical works, identification and protection of archaeological sites where practicable within the construction programme and an archaeological watching brief during groundworks.

7.9.3 NRW PS consider that a WSI and a Protocol for Archaeological Discoveries can be secured through the provision of appropriate conditions within any Marine Licence issued. NRW PS are content that onshore archaeology will be fully considered as part of determination of the Section 36 and deemed planning permission to be determined by another consenting authority (refer Section 7.17).

7.9.4 Given the above, NRW PS are content that the potential impacts on Offshore Archaeology and Cultural Heritage receptors have been sufficiently addressed by the Applicant within the ES.

7.10 Commercial Fisheries

7.10.1 The impacts on commercial fisheries were considered within Chapter 15 of the ES, and no significant effects were identified. Representation from Welsh Government fisheries did not raise any key issues with the Applicant's ES, Marine Licence

application or other supporting documentation in relation to commercial fisheries. In addition, no comment was received from the Welsh Fishermen's Association (WFA). However; NFFO raised concerns with regard to the economic impact of the Project; concerns surrounding the displacement of vessels and the Applicants assessment in relation to the snagging risk of different gear types. The NFFO also did not agree with the conclusions for the assessment in relation to the size of exclusion area on the commercial fishing fleet.

7.10.2 Further clarification was provided on the assessment by the Applicant within response to comments (ORML2170 technical consultation comments and responses.xls) and NFFO confirmed they were content with the snagging risk mitigation which incorporates best practice (e.g. use of a dedicated Fisheries Liaison Officer (FLO), communication of 'as-laid' coordinates, monitoring of cable exposure. NRW PS are satisfied these can be secured through appropriate conditions within any Marine Licence issued. Concerns in relation to economic impacts and displacement were addressed by the Applicant within their response to consultation comments and further information submissions. NFFO continue to raise concerns in relation to economic impacts resultant from loss of access to fishing grounds and displacement over large areas of the Celtic Sea, in relation to the wider TCE lease areas, causing spatial squeeze, although they acknowledge the precise locations and scale of developments are as yet unknown.

7.10.3 NRW PS are satisfied that the potential impacts on commercial fisheries have been sufficiently considered and addressed by the Applicant within the ES and supplementary documentation.

7.11 Shipping and Navigation

7.11.1 A number of representations were made in relation to this topic by Maritime and Coastguard Agency (MCA), Trinity House (TH), UK Chamber of Shipping and the Royal Yachting Association (RYA). The key concerns raised included:

- The use of the ten year data set when the Marine Accident Investigation Branch (MAIB) has data existing back to 1992.
- Concerns relating to snagging risk for commercial vessels around each WTG and the under-keel clearance (UKC) of the array.
- The length of dataset utilised to inform the accident and incident assessment
- Consideration of a lower speed threshold within the Navigational Risk Assessment e.g. for anchoring and loitering
- Lighting and marking of marine infrastructure.
- The approach to the cumulative assessment
- The linear progression of the construction programme to avoid disparate construction sites across the development area

7.11.2 To address the issues raised, the Applicant submitted further information and justifications. Key to addressing these issues were:

- Confirmation by the Applicant that a construction plan secured within the PEMP will be agreed with NRW PS prior to commencement of works.

- Further information and justification with regard to the ES assessments and the data sets utilised to inform these assessments (EIA Addendum, Aug 2022)
- Lighting and marking of devices to ensure safety of navigation while being cognisant of the International Association of Marine Aids to Navigation and Lighthouse Authorities (IALA) recommendations. However, it is noted that the markings will need to be determined after the device specific layout has been agreed.
- Commitment to approval (by MCA and Trinity House) of turbine layout design prior to construction
- Commitment by the Applicant to the final construction method statement being shared with MCA and Trinity House confirming offshore cable layout plan, any cable protection locations.
- Applicant confirms cable protection will be in compliance with MGN654 and will not reduce water depths by more than 5% (ref chart Datum)
- Applicant confirmed that to meet the requirements of MGN654, and at the request of Trinity House, post-construction monitoring using AIS data will be completed and submitted annually to NRW PS, Trinity House and MCA for a period of 3 years.

7.11.3 NRW PS has noted the confirmation from the MCA that the Applicant has carried out the assessment in line with MGN 543 and that all vessel traffic data acquired for the project and presented in the NRA addendum and ES is fully compliant with their requirements and those of MGN 543).

7.11.4 NRW PS consider that sufficient justification has been provided by the Applicant on the approach to the assessment. Detail on the final devices to be deployed has yet to be confirmed and therefore a Rochdale envelope approach (see Section 7.1) has been taken by the Applicant. Accordingly, a worst-case scenario was adopted for the NRA and ES. NRW PS are satisfied that the worst-case scenario has been considered by the Applicant.

7.11.5 NRW PS have noted the navigation safety conditions and advisories requested by the MCA and TH, these include but are not limited to; agreement of final turbine layout, notices to mariners, an agreed (with TH and MCA) aids to navigation plan for the duration of the Project, post-construction AIS monitoring in line with MGN654 and subsequent annual reporting for a 3-year period. These can be secured through the provision of appropriate conditions in any Marine Licence issued and are detailed further in Section 8.

7.11.6 In light of the above, NRW PS are content that the potential impacts on Shipping and Navigation have been sufficiently addressed by the Applicant within the ES and supplementary documentation. Subject to the appropriate mitigation being applied, NRW PS consider that the mitigation required can be secured through the provision of appropriate conditions within any Marine Licence issued.

7.12 Aviation and Radar

7.12.1 The MOD confirmed the development falls within Low Flying Area 7 and the presence of turbines in this location has the potential to introduce a physical obstruction to low flying aircraft operating in the area. The MOD have requested conditions of consent specific to lighting (see Section 8) in accordance to Air Navigation Order (2016).

7.12.2 No other comments were received and NRW PS are content that the potential impacts on Aviation and Radar have been sufficiently addressed by the Applicant within the ES and the necessary mitigation required by MOD can be secured through the provision of appropriate conditions within any Marine Licence issued.

7.13 Coastal and Marine Infrastructure and Other Users

7.13.1 No comments were provided in relation to marine infrastructures and other users. Recreational navigation and commercial shipping are covered within the navigation topic (Section 7.11).

7.13.2 Given this, NRW PS have concluded that the potential impacts from the Project have been adequately addressed in the ES.

7.14 Onshore Geology, Hydrogeology and Hydrology

7.14.1 No comments were received on this ES chapter. PCC provided comments on additional consents required before undertaking this work which the Applicant has acknowledged. No concerns have been raised by NRW TE in relation to flooding

7.14.2 NRW PS have therefore concluded that the potential impacts from the Project have been adequately addressed within the ES.

7.15 Terrestrial and Coastal Ecology and Onshore Ornithology

7.15.1 PCNPA, and PCC both agree with the outcome of the impact assessment and although there are some detrimental impacts to wildlife and biodiversity e.g. removal of hedgerows, it is considered that protected species impacts can be avoided and that the mitigation and enhancement measures proposed will lead to an enhancement to onshore ecology. NRW TE raised concerns relating to bats, in particular foraging and commuting flight lines within the proposed works corridor, presence of otter and requirements for a lighting plan. Following further submissions by the Applicant and their agreement to mitigation measures secured through conditions of planning, NRW were satisfied with the proposal.

7.15.2 The mitigation measures, secured through the PEMP include the necessary safe-guarding of bat flight-paths at night, a Lighting Plan and a Species Protection Plan (SPP) informed through pre-construction surveys (to include but not limited to reptiles, otter and bats), an updated dormouse mitigation strategy, micro-siting to avoid sensitive areas and temporal restrictions on working will require consultation and agreement with the LPA and other stakeholders (e.g. NRW TE and RSPB for chough) prior to commencement of works.

7.15.3 PCNPA , NRW TE and PCC agree that the necessary mitigation can be delivered through the PEMP (to include SPP and other mitigation strategies e.g. lighting plan) and a Landscape Ecological Management Plan (LEMP) to include an enhancement plan identifying all proposed enhancement measures, can be secured and agreed post-consent through a condition of Section 36 and deemed planning permission. The onshore works fall outside the jurisdiction of the Marine Licence; however, NRW PS are content that there is a requirement for a Section 36 and Planning Permission to be determined by another consenting authority and know of no reason why such measures could not be secured.

7.15.4 NRW PS are therefore satisfied that impacts and concerns in relation to terrestrial, coastal ecology and onshore ornithology have been adequately addressed within the ES and supplementary information. NRW PS are satisfied that the onshore impacts will also be fully considered by the Welsh Ministers in determining the Section 36 Consent and application for deemed Planning Permission.

7.16 Landscape and Visual Impact

7.16.1 PCNPA and PCC both agree with the outcome of the LVIA assessment (including the cumulative assessment) and that the Project's direct impact on the landscape features including agricultural land, hedgerows and coastal landscape can be appropriately mitigated.

7.16.2 PCC consider that suitable mitigation delivered through a Landscape Management Plan (LMP) to include an enhancement plan identifying all proposed enhancement measures. The onshore works fall outside the jurisdiction of the Marine Licence; however, NRW PS are content that there is a requirement for a Section 36 and Planning Permission to be determined by another consenting authority and know of no reason why such measures could not be secured.

7.16.3 NRW PS are therefore satisfied that the impacts and concerns in relation to Landscape and Visual Impact have been adequately addressed within the ES and supplementary information and that the necessary mitigation can be secured as a condition of planning through the Section 36 consent. NRW PS are satisfied that the onshore impacts will also be fully considered by the Welsh Ministers in determining the Section 36 Consent and application for deemed Planning Permission.

7.17 Onshore Noise and Vibration

7.17.1 PCNPA and PCC agreed with the assessment that there would be no significant environmental effects in respect of noise during operational phase and that noise generated during the construction phase will be suitably controlled through the PEMP which will be secured as a condition of Section 36 consent. The onshore works fall outside the jurisdiction of the Marine Licence; however, NRW PS are content that there is a requirement for a Section 36 and Planning Permission to be determined by another consenting authority and know of no reason why such measures could not be secured.

7.17.2 No other representations were received in relation to airborne noise and vibration. Representations were made in relation to underwater noise and these are considered in Section 7.5 (Fish and Shellfish Ecology) and 7.7 (Marine Mammals). Therefore, NRW PS have concluded that the potential impacts due to the project have been adequately addressed within the ES and supporting documentation.

7.18 Onshore Archaeology and Cultural Heritage

7.18.1 Cadw and WAT concurred with the conclusions of the applicant in relation to Onshore Archaeology and Cultural Heritage. PCC also agree with the conclusions but raised the omission from the ES of the C17-C18 Brownslate Farmhouse and outbuildings (Grade II listed) where the substation would be visible within its setting. However PCC also state that the visual impact of the substation would be neutral due to the visual dominance of the existing power station.

7.18.2 As identified within the ES there is a potential for impact on archaeological deposits along the route of the cable and recommended mitigation measures are presented which result in the conclusion of no significant residual effects. Cadw, WAT, PCNPA and PCC are in agreement with these mitigation measures: which include the Written Scheme of Investigation (WSI) to be submitted to and approved by the LPA as a condition of planning permission prior to commencement of works. The onshore works fall outside the jurisdiction of the Marine Licence; however, NRW PS are content that there is a requirement for a Section 36 and Planning Permission to be determined by another consenting authority and know of no reason why such measures could not be secured.

7.18.3 NRW PS are therefore satisfied that the impacts and concerns in relation to Onshore Archaeology and Cultural Heritage have been adequately addressed within the ES and supplementary information.

7.19 Land Use

7.19.1 Representations were received from PCNPA and PCC in relation to public rights of way and the need to inform the public with regard to the explanation of the development and the location of the substation structure (this has been considered within section 7.26 below).

7.19.2 The onshore cabling component of the Project will cross the footpaths SP37/7, SP34/6, SP34/5 and the Bridleway SP37/6. The Applicant has recognised this within the assessment and have committed to both applying for Temporary Traffic Closures of the Public Rights of Way prior to commencement of construction; and, reinstatement of all paths and bridleways on completion of the construction.

7.19.3 NRW PS consider that the potential impacts from the Project have therefore been adequately addressed within the ES and supporting documentation and that the commitments made by the Applicant for mitigation can be secured as conditions of Section 36 consent and deemed planning permission. NRW PS are content that there is a requirement for a Section 36 and Planning Permission to be determined

by another consenting authority and know of no reason why such measures could not be secured.

7.20 Traffic and Transport

7.20.1 Representations were received from PCNPA and PCC in relation to traffic and transport. Representations were also made in relation to marine traffic which are discussed within section 7.16 (Shipping and Navigation).

7.20.2 Road closures required for onshore cable installation works and construction traffic will all be managed through the Project's Construction Traffic Management Plan (CTMP). PCNPA agree with the conclusions for the operational phase and accept that the mitigation measures identified within the CTMP will prevent impacts of significant effect from occurring during construction. The onshore works fall outside the jurisdiction of the Marine Licence; however, NRW PS are content that there is a requirement for a Section 36 and Planning Permission to be determined by another consenting authority and know of no reason why such measures could not be secured.

7.20.3 NRW PS consider that the potential impacts from the Project have been adequately addressed within the ES and supporting documentation.

7.21 Air Quality

7.21.1 PCC and PCNPA agree with the assessment of significance and no other representations were received in relation to this topic.

7.21.2 NRW PS therefore consider that the potential impacts from the Project have been adequately addressed within the ES and supporting documentation.

7.22 Socio-Economics, Tourism and Recreation

7.22.1 Concerns were raised by PCC (specific to public rights of way/recreation) , and RSPB during consultations (March/April 2022 and October 2022) these were:

- The need to inform members of the public, most notably footpath users, with information about the ned for such a large structure (Project's sub-station) within the open countryside and provide information about the landscape within which the building will sit.
- Concerns the socio-economic benefits to the Welsh Economy have been overinflated within the assessment and a lack of transparency as to calculations of Gross Value Added (GVA).

7.22.2 To address the issues raised, the Applicant submitted further information and justifications. Key to addressing these issues were:

- The commitment to erect interpretation boards to inform members of the public about the Project. Specific information to be included on the boards and their locations to be agreed post-consent with the Local Planning Authority prior to construction.

- Clarification and justification of the economic impact assessment was presented by the Applicant in November 2022 further information submission.

7.22.3 NRW PS acknowledge the proposals from the Applicant to deliver interpretation boards. The onshore works fall outside the jurisdiction of the Marine Licence; however, NRW PS are content that there is a requirement for a Section 36 and Planning Permission to be determined by another consenting authority and know of no reason why such measures could not be secured.

7.22.4 NRW PS acknowledge the justification of the economic impact assessment (Technical Appendix 27.1 of the ES submission) and agree with the conclusions that the development will have an economic benefit to the Welsh economy.

7.22.5 In light of the above, NRW PS are satisfied that the potential impacts and concerns on Socio-economics, Tourism and Recreation have been sufficiently addressed by the Applicant within the ES and supplementary documentation.

7.23 Climate Change, Major Accidents and Disasters

7.23.1 NRW TE stated that the Applicant should consider impacts to adaption to climate change on marine habitats, including the loss of ability of sediments to function as sequesters of carbon within the footprint of the development, and potential release of stored carbon from sediments within the development area. This is in line with existing guidance on integrating climate change and biodiversity into EIA.

7.23.2 Further information provided by the Applicant considering the adaptation of benthic habitats to future climatic change that may occur over the lifetime of the Project assessed alongside any impacts to these habitats arising from the Project itself specifically for changes in marine processes, elevation of sea temperatures and carbon storage, sequestration and release (EIA Addendum, Aug 2022). This further assessment was deemed sufficient to address the concerns.

7.23.3 No other representations were received in relation to this topic.

7.23.4 NRW PS consider that the potential impacts from the project have been adequately addressed within the ES and supporting documentation.

7.24 Inter-related Effects

7.24.1 No comments were received directly in relation to this chapter. However, there is overlap between this topic and cumulative effect which is considered below.

7.25 Cumulative Effects

7.25.1 Concerns were raised on this topic by NRW TE, JNCC and RSPB. The main issues included:

- Inconsistencies and gaps identified in relation to the cumulative and in-combination effects.

- List of plans/projects considered within the assessments is not comprehensive. Several projects considered relevant to the cumulative assessment are missing, therefore making determination of the full scale of potential cumulative/in-combination effects not possible. Justification for plans/projects included and associated receptors/pathways should be clearly stated.
- Clarity on the overlap of Project Erebus and Project Valorous. In several places through the ES and supporting documents there is indication that the construction phases will overlap but this is omitted from the cumulative assessment.
- How impact pathways have been considered for each receptor and factored into the assessment.
- The need to revisit cumulative impact assessment once any deficiencies in the assessment and information provided for an individual receptor topic had been addressed by the Applicant.

7.25.2 To address the issues raised, the Applicant submitted further information and justifications. Key to addressing these issues were:

- Provision of a signposting document (ORML2170 technical consultation comments and responses.xls) to indicate how and where issues had been addressed.
- Inclusion of other Projects within the cumulative assessment (refer EIA Addendum, Aug 2022)
- Consideration of cumulative underwater noise effects assessment in relation to disturbance of marine mammals (EIA Addendum, Aug 2020).
- Confirmation that the Project Erebus construction phase will not overlap with Project Valorous construction phase (ORML2170 technical consultation comments and responses.xls).

7.25.3 NRW PS note that the updated information provided for each topic did not alter the overall conclusions of the Cumulative Impact Assessment. Given all the above, NRW PS are content that the potential impacts and concerns around this topic have been sufficiently addressed by the Applicant within the ES and supplementary documentation.

8. Mitigation or monitoring measures to be taken

8.1 Features or measures to avoid, prevent, reduce or offset likely significant effects

8.1.1 In reaching the Conclusion about Environmental Impact (Regulation 21A of the Regulations), NRW must consideration of any features of the project, or proposed measures, to avoid, prevent, reduce or offset any likely significant adverse environmental effects (regulation 21A (1)(f)).

8.1.2 NRW considers that the following features of the project, or measures included within the project proposal, as described in the application form, Environmental

Statement and other supporting information, would avoid, prevent, reduce or offset any likely significant adverse environmental effects:

- Site selection and route of the Export Cable Corridor (ECC) to avoid sensitive features (as proposed within ES chapters: Chapter 6 Marine and Coastal Processes; Chapter 9 Marine and Coastal Ecology; Chapter 10 Fish and Shellfish Ecology; Chapter 13 Seascape and Landscape Visual Impacts);

- Scour protection to be used where infrastructure cannot be buried and seabed is erodible (Chapter 6 Marine and Coastal Processes);

- Deposition of dredged material within 200m of extraction site (Chapter 6 Marine and Coastal Processes);

- Cable burial risk assessment and development of cable specification and installation plan (Chapter 6 Marine and Coastal Processes; Chapter 9 Marine and Coastal Ecology);

- Preferred use of HDD rather than open cut trenching at the cable landfall area (Chapter 6 Marine and Coastal Processes; Chapter 9 Marine and Coastal Ecology; Chapter 20 Terrestrial and Coastal Ecology);

- Preferred use of mooring anchors rather than drilling/piling (Chapter 9 Marine and Coastal Ecology);

- Minimum 22m air gap between rotor tip and mean sea level at all tidal states to avoid collisions with birds flying at lower heights (Chapter 11 Offshore Ornithology);

- Wherever possible; doorway and walkway lighting on semi-submersible floating platforms will be sensor activated (Chapter 11 Offshore Ornithology)

- Production of an Invasive Non-Native Species Plan (Chapter 9 Marine and Coastal Ecology);

- Marine Biodiversity Enhancement Strategy to be developed to account for any loss of key habitats (Chapter 9 Marine and Coastal Ecology);

- Production of a Project Environmental Management Plan (PEMP) to include pollution contingency plans (Chapter 9 Marine and Coastal Ecology; Chapter 10 Fish and Shellfish Ecology);

- Best practices techniques throughout all construction, operation and maintenance and decommissioning activities (Chapter 9 Marine and Coastal Ecology);

- Environmental Mitigation and Monitoring Plan (EMMP) to be produced prior to construction (Chapter 11 Offshore ornithology, Chapter 9 Marine & Coastal Ecology)

- Aim to conduct work within a shortest time period as logistically possible to reduce disturbance (Chapter 10 Fish and Shellfish Ecology);
- Soft-start approach for any piling activities (Chapter 12 Marine Mammals Chapter 10 Fish and Shellfish Ecology);
- UXO low order deflagration only and pre-deflagration mitigation (e.g., route cable around identified UXO) (Chapter 10 Fish and Shellfish Ecology; Chapter 11 Offshore Ornithology);
- Remotely Operated Vehicle (ROV) inspections of moorings and substructures (Chapter 11 Offshore Ornithology);
- Use of additional datasets to inform the baseline and assessment (Chapter 11 Offshore Ornithology);
- Implementation of a Vessel Management Plan (VMP) (Chapter 11 Offshore Ornithology; Chapter 12 Marine Mammals);
- Where possible, lighting on walkways and doorways of Project infrastructure will be sensor activated (Chapter 11 Offshore Ornithology);
- Implementation of piling, UXO and decommissioning Marine Mammal Mitigation Plans (MMMP) (Chapter 12 Marine Mammals).

8.2 Mitigation or monitoring required to be attached to the consent (Regulation 22 (c)-(e))

8.2.1 In reaching the EIA Consent Decision required under Regulation 22, NRW must make consideration of the requirement for any mitigation measures or monitoring required to be attached to the consent.

8.2.2 Section 7 outlines where NRW PS considers that there is a requirement for mitigation and/or monitoring, and sets out the measures we consider necessary to address potential impacts identified through the EIA process. These are summarised below:

8.2.3 Licence conditions will be required to ensure that a Cable Installation Plan is submitted and approved prior to any cable protection being deposited. The cable installation plan would include commitment that cable protection would be non-continuous to allow sediment to overtop and flow around it, and that on the north and south sides of Turbot Bank the height of the cable protection will not exceed 1.5m to reduce the barrier to sediment flow.

8.2.4 Licence conditions will be required to ensure post construction monitoring programme is carried out post consent and in agreement with NRW TE to assist with the validation of complex coastal process modelling.

8.2.5 Licence conditions will be required to ensure that the Marine Pollution Contingency Plan and Project Environmental Management Plan (PEMP) are submitted and approved by the licensing authority prior to commencement of works. The conditions will ensure that pollution prevention best practice is adhered to, including that appropriate bunding and storage facilities are installed to contain and prevent the release of fuel, oils and chemicals associated with the plant, refuelling and construction equipment into the marine environment. This will reduce the potential for a significant effect on water quality

8.2.6 Licence conditions will be required to ensure that an Invasive Non-Native Species (INNS) Management Plan is submitted and approved by the Licensing Authority prior to commencement of works. In order to reduce the potential risk of spread of INNS.

8.2.7 Licence conditions will be required to ensure that a detailed Environmental and Mitigation Monitoring Plan (EMMP) is developed and agreed with the Licensing Authority in line with the Outline Environmental Monitoring Plan (OEMP) (as submitted 24 August 2022) with the commitment for post-consent monitoring of to validate the conclusions of the ES for several topics including seabirds at protected sites (e.g. bird tagging, collision sensors, long-term demographic studies).

8.2.8 To prevent injury to marine mammals during construction, licence conditions will be required to ensure that a Marine Mammal Mitigation Protocol (MMMP) and a Vessel Management Plan (VMP) is submitted to and approved by the Licensing Authority prior to commencement of works. Post consent Monitoring of Marine Mammals should also be considered and agreed as part of the development of the EMMP.

8.2.9 To reduce impact on the historic environment, licence conditions will be required to ensure that no licenced activities (including geotechnical investigations or other preliminary works affecting the seabed) take place until an Archaeological Mitigation Strategy has been submitted to and approved by the Licensing Authority, this should include:

- a Protocol for Archaeological Discoveries to be submitted to and approved in writing by NRW before any marine works can commence;
- the provision and approval of a WSI for a staged programme of archaeological work.

8.2.10 Given that the full details of the devices and location are currently unknown, licence conditions will be required to ensure a Layout Design Plan is submitted prior to construction. Additionally the Construction Method and installation plan for the turbines and cable, including location of cable protection will need to be submitted and agreed. This is to ensure that navigational risk is appropriately mitigated.

8.2.11 Licence conditions will be required to ensure that navigational safety is not compromised as a result of reducing water depth through cable protection activities (referenced to Chart Datum).

8.2.12 Licence conditions will be required to ensure that the developer produces an

appropriate monitoring scheme to assess navigational safety.

8.2.13 To ensure safety to navigation licence conditions will be required surrounding aids to navigation, and lighting and marking requirements, which will need to be submitted and approved by the licensing authority prior to commencement of licenced activities.

8.2.14 To reduce impact on navigation and other uses of the sea, a licence condition will be required to ensure mariners and fishermen's organisations are made aware of the activity and that the HM Coastguard and United Kingdom Hydrographic Office (UKHO) are notified of licensed activities.

8.2.15 A licence condition will be required to ensure that the devices are regularly inspected and maintained. In case of damage or disrepair, relevant authorities including the MCA and TH will need to be notified and relevant steps taken to maintain safety of navigation such as aids to navigation and lighting.

8.2.16 To ensure safety of navigation, licence conditions will be required to ensure that all structures in the development are coloured as directed by TH.

8.2.17 To ensure safety of aviation a condition will be required to ensure that turbines display appropriate lighting in accordance to Air Navigation Order (2016).

8.2.18 The onshore works fall outside the jurisdiction of the Marine Licence; however, NRW PS are content that there is a requirement for a Section 36 and Planning Permission to be determined by another consenting authority and know of no reason why such measures could not be secured. Mitigation which has been identified or proposed by the applicant in relation to the deemed planning permission which have been considered in section 7 above include;

8.2.18.1 Landscape Management Plan (LMP) to include an enhancement plan identifying all proposed enhancement measures to mitigate and offset potential impacts on landscape and seascapes.

8.2.18.2 Controls will be required to appropriately manage Road closures if required for onshore cable installation works and construction traffic.

8.2.18.3 Controls will be required in order to manage potential impact on archaeology and cultural heritage within the onshore area.

8.2.18.4 Control to ensure that the public are made aware of the need to close any public footpaths.

8.2.18.5 A number of plans have been proposed in order to manage the potential impact to biodiversity, including but not limited to; a Project Environment Management Plan and a Species Management Plan.

8.2.19 The list of controls above are not exhaustive, as part of the requirements of the Section 36 and Deemed Planning Permission considered by PEDW, should the application be successful and granted, various additional mitigation will be required above Mean High Water Spring (MHWS). The description and detail of these mitigation will be contained within the Section 36 decision.

9. Regulation 21A Conclusion about Environmental Impact

9.0.1 In reaching a Conclusion about Environmental Impact, as required by Regulation 21A, NRW has considered the following (Regulation 21A(1)):

- The application for a Marine Licence
- The Environmental Statement submitted in support of the ML application.
- Further information provided under Reg 14(1), (outlined in Section 3.3).
- The responses to public consultation under Reg 16(2) (g) (outlined in Sections 4 and 7).
- The responses to the technical consultation under Reg *17(1)(a)(iv)* (outlined in Sections 6 and 7).
- Any comments received from another EEA state under Reg 20, (as outlined in Sections 5 and 7).
- Any features of the project, or proposed measures, to avoid, prevent, reduce or offset any likely significant adverse environmental effects (as outlined in Section 8).

9.0.2 NRW, as appropriate authority, has considered the likely significant effects of the project, and reached a conclusion of the likely significant effects of the project with regard to the following (Regulation 21A(2)):

Population and human health (9.1)
Biodiversity (9.2)
Land, soil, water, air and climate (9.3)
Material assets, cultural heritage and landscape (9.4)
Risk of major accidents and disasters relevant to the project (9.5)
Cumulative impacts and in-combination impacts (9.6)

9.1 Population and human health

9.1.1 The ES has assessed the impact on population and the human environment. The ES carried out a detailed assessment of potential impact on seascapes and landscapes as a result of the development. As discussed within Section 7.8, whilst NRW PS conclude that visual impacts have been appropriately assessed within the ES, it is considered that a potential impact on visual receptors remains after consideration of mitigation. Within Section 1.2.5 of the ES, the Applicant sets out the need for the Project including its benefit to the renewable sector including contributing to UK commitment to deliver 50GW of offshore wind capacity by 2030, some of which in the form of Floating wind. In addition, the Applicant has agreed to a potential compensation package with the PCNPA to secure measures for landscape enhancement.

9.1.3 NRW PS consider that the impacts to seascape and visual receptors from the Project have been adequately addressed within the ES and all other information presented or obtained. In our conclusion, the adverse effects of the proposed development to seascape and visual receptors are significant. We accept the evidence that these effects cannot be completely avoided, minimised or mitigated; and, we are satisfied that the Applicant has presented a clear and convincing case for proceeding with the proposed development.

9.1.4 As discussed in Section 7.20, NRW PS are satisfied that the potential impacts and concerns on socio-economics, tourism and recreation have been appropriately assessed within the ES.

9.1.5 Risks to navigational safety and human life, were considered in the ES chapter 15 (Volume I) and NRA (addendum) and assessed as ALARP or lower with the necessary risk controls and mitigation in place. This includes the necessary markings and lighting, agreement of turbine layout and requirement to monitor AIS data for a three-year period post-construction.

9.1.6 NRW PS are satisfied that population and human health have been adequately addressed and considering the mitigation and licence conditions outlined in Section 8. NRW PS are satisfied that there will be no impact of significant effect on population or human health as a result of the project apart from potential visual impact that may remain. As set out in Section 7.19 of this consent decision, NRW PS are satisfied that although visual impacts remain, there has been a clear and convincing case set forward for proceeding with the development by the Applicant.

9.2 Biodiversity

9.2.1 The works are within and/or overlap with a number of designated European sites and have the potential to impact these sites. However, a HRA carried out by NRW PS (see Section 3.2.4) concluded that the licensable activities seaward of MHWS would not lead to an Adverse Effect on Site Integrity to these sites or any other sites with relevant marine features taking into account all of the mitigation measures proposed.

9.2.2 The ES considered the impact on biodiversity and identified a number of potential impacts including on marine mammals, ornithology, and benthic habitats where additional mitigation was required. NRW PS consider that although there is a potential for an impact on these features, relying upon the proposed mitigation measures and the implementation of appropriate conditions (see Section 8), significant effects will be avoided. Key mitigation identified include the production and adherence to a PEMP, Marine Pollution Control Plan (MPCP), VMP, MMMP and EMMP these will ensure an impact of significant effect is avoided.

9.2.3 The ES considers the potential for further indirect impacts on biodiversity through possible pollution events and the introduction and/or spread of invasive non-native species. NRW PS consider that biodiversity has been appropriately assessed and conclude that through the mitigation and licence conditions outlined in Section 8, a significant effect on biodiversity will be avoided.

9.3 Land, soil, water, air and climate

9.3.1 The purpose of the Project, as stated by the Applicant, is to support the development of FLOW within the Celtic Sea for electricity generation to contributing to UK commitment to deliver 50GW of offshore wind capacity by 2030, some of which in the form of Floating wind. Therefore, the Project aims to positively contribute towards climate change and assist with reducing greenhouse gas emissions.

9.3.2 There is, however, an impact pathway to water quality through a potential pollution event, and/or sedimentation during the construction period. The ES has assessed these impacts and proposed mitigation including adherence to a PEMP, and a MPCP which would include pollution prevention best practices. NRW PS consider that the works have been appropriately assessed and that with the mitigation proposed within the ES and proposed conditions outlined in Section 8, no significant effect on water or sediment quality will occur.

9.4 Material assets, cultural heritage and landscape

9.4.1 The ES has assessed the impact on material assets, including archaeological heritage, valued for socio-economic or heritage reasons and impacts on landscape and seascape. A Written Scheme of Investigation (WSI) will be required and offshore and onshore works will need to be carried out in line with the WSI.

9.4.5 NRW PS can conclude that the ES has appropriately assessed the impacts in relation to material assets, cultural heritage and landscape and with the application of mitigation and that the potential impact can be managed by adherence to the Marine Licence conditions (Section 8). As set out in Section 7.8, NRW PS consider that although visual impacts remain, offsetting measures can be agreed and secured as part of the Section 36 consent and deemed planning permission and there has been a clear and convincing case set forward for proceeding with the development by the Applicant.

9.5 Risk of major accidents and disasters relevant to the project

9.5.1 The risk of a major accident or pollution event has been adequately assessed in the ES and identified as a low risk with the application of mitigation and conditioned management measures (see Section 8).

9.5.2 NRW PS are satisfied that the submitted Flood Consequence Assessment provides a true reflection of flood risks from the Project and conclude that these can be appropriately managed.

9.5.3 NRW PS have concluded that the potential risk of major accidents and disasters relevant to the project have been adequately addressed within the ES and supplementary documentation.

9.6 Cumulative impacts and in-combination impacts

9.6.1 After considering the information in the ES and associated documents, the responses from consultees, and the potential impacts from other plans and projects, the conclusion of NRW PS is that the potential cumulative impacts and in-combination impacts have been adequately assessed, are unlikely to be significant and are within acceptable limits.

9.6.2 The HRA completed by NRW PS concluded that the works would not cause a significant effect either alone or in-combination on a European designated site (refer Section 3.2.4).

9.6.3 NRW PS have concluded that the potential cumulative impacts due to the project have been adequately addressed within the ES and supplementary documentation.

Produced By: Seran Davies

Signed: 
Date: 16 February 2023

Approved by: John Wheadon – Permitting Service Manager

Signed: 
Date: 16 February 2023

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10. Regulation 22 EIA Consent Decision

10.0.1 The Marine Licensing Team has considered the application ORML2170 and information provided in support of the application and is now in a position to make an EIA consent decision to Blue Gem Wind Ltd.

10.0.2 In accordance with Regulation 22 of the Regulations, NRW PS, as appropriate authority, have considered:

- The application for a Marine Licence
- The Environmental Statement submitted
- Further information provided, as outlined in section 3.3
- The Conclusion about Environmental Impact (under Regulation 21A(2)) in section 9 (dated 16 February 2023), which we consider to be up to date
- The responses to public consultation outlined in sections 4 and 7
- The responses to the technical consultation outlined in sections 6 and 7
- Any comments received from another EEA state, as outlined in section 5 and 7
- Whether monitoring of the significant adverse environmental effects of the Project is appropriate (as outlined in section 8), including whether
    - Existing monitoring can be relied upon
    - Conditions should be attached to the regulatory approval
    - Whether conditions to make provision for potential remedial action are required, as outlined in section 8
    - Whether any other conditions need to be attached to the regulatory approval, with respect to the likely significant environmental effects of the Project, as outlined in section 8.

10.0.3 We conclude that the environmental impacts of the Project have been adequately identified, described and assessed. Accordingly, we conclude that EIA consent for the project should be given.

10.0.4 We consider the works have been appropriately assessed and adequate mitigation strategies have been incorporated to remove or reduce the potential for impacts of significant effect associated with the development.

10.0.5 We consider that the monitoring and mitigation conditions outlined in Section 8 should be considered in the regulatory decision.

10.1 This Written Confirmation of the EIA Consent Decision will be sent to the following, in accordance with Regulation 23 of the Regulations:

- Blue Gem Wind Energy Ltd (and their Agent Marine Space)
- Any person from whom NRW received representation arising from the consultation described in section 4
- Any EEA states consulted (see section 5)
- All consultation bodies listed in section 6

10.2 This Written Confirmation of the EIA Consent Decision is available on the NRW online public register at https://publicregister.naturalresources.wales/ using the application reference number ORML2170.

Produced By: Seran Davies

Signed: 
Date: 16 February 2023

Approved by: John Wheadon – Permitting Service Manager

Signed: 
Date: 16 February 2023

ANNEX 1

Submitted documents in support of Marine Licence Application ORML2170

Submitted 17 December 2021

ORML2170 - Erebus ES Vol 1 Chapter 1 Introduction.pdf • ORML2170 - Figure 1.1.pdf
ORML2170 - Erebus ES Vol 1 Chapter 2 Overview of EIA Methodology_final.pdf
ORML2170 - Erebus ES Vol 1 Chapter 3 Site Selection and Alternatives final.pdf • ORML2170 - Figure 3.1.pdf • ORML2170 - Figure 3.2.pdf • ORML2170 - Figure 3.3.pdf • ORML2170 - Figure 3.4.pdf • ORML2170 - Figure 3.5.pdf • ORML2170 - Figure 3.6.pdf • ORML2170 - Figure 3.7.pdf • ORML2170 - Figure 3.8.pdf
ORML2170 - Erebus ES Vol 1 Chapter 4 Proposed Development Description final.pdf • ORML2170 - Figure 4.1a.pdf • ORML2170 - Figure 4.1b.pdf • ORML2170 - Figure 4.2.pdf • ORML2170 - Figure 4.3.pdf • ORML2170 - Figure 4.4.pdf • ORML2170 - Figure 4.5.pdf • ORML2170 - Figure 4.6.pdf • ORML2170 - Figure 4.7.pdf • ORML2170 - Figure 4.8.pdf • ORML2170 - Figure 4.9.pdf • ORML2170 - Figure 4.10.pdf
ORML2170 - Erebus ES Vol 1 Chapter 5 Policy and Legislation final.pdf
ORML2170 - Erebus ES Vol 1 Chapter 6 Marine and Coastal Processes_final.pdf • ORML2170 - Figure 6.1.pdf • ORML2170 - Figure 6.2.pdf • ORML2170 - Figure 6.3.pdf • ORML2170 - Figure 6.4.pdf • ORML2170 - Figure 6.5.pdf • ORML2170 - Figure 6.6.pdf • ORML2170 - Figure 6.7.pdf • ORML2170 - Figure 6.8.pdf • ORML2170 - Figure 6.9a.pdf • ORML2170 - Figure 6.9b.pdf • ORML2170 - Figure 6.10.pdf • ORML2170 - Figure 6.11.pdf • ORML2170 - Figure 6.12.pdf • ORML2170 - Figure 6.13.pdf • ORML2170 - Figure 6.14.pdf • ORML2170 - Figure 6.15.pdf • ORML2170 - Figure 6.16.pdf • ORML2170 - Figure 6.17.pdf • ORML2170 - Figure 6.18.pdf
ORML2170 - Erebus ES Vol 1 Chapter 7 Marine Seabed and Water Quality_final.pdf • ORML2170 - Figure 7.1.pdf • ORML2170 - Figure 7.2.pdf

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ANNEX 2

Documents submitted on 24 August 2022 following request for further information under Regulation 14 in support of Marine Licence Application ORML2170

- ORML2170 Project Erebus Supplementary Environmental Information (ES Addendum)
- ORML2170 Project Erebus Technical and General Consultation Responses SEI Response.xls
- ORML2170 Project Erebus Draft Outline Environmental Monitoring Plan (OEMP)

ANNEX 3

Documents submitted by Applicant on 18 November 2022 following request for technical clarification in support of Marine Licence Application ORML2170

- ORML2170 Project Erebus Further Clarifications Report
- ORML2170 Project Erebus Technical and General Consultation Responses SEI Response Further Clarifications v2.0
- ORML2170 Project Erebus Additional Bathymetric Analysis (for Technical Clarification) Report